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Management for caesarean section in a known case of pituitary tumour with severe PIH

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Abstract

The pituitary gland undergoes global hyperplasia during pregnancy. Pituitary tumour cells in patients with prolactinoma and that with growth hormone secreting tumour exhibit symptomatic enlargement during pregnancy, either due to the growth promoting effect of oestrogens or due to the high levels of circulating Progesterone that occur with gestation. Based on their size prolactinoma (>1cm) or microadenoma microadenoma are classified into macroadenoma with severe pregnancy induced hypertension posted for emergency Caesarean section under epidural anaesthesia. Here we present successful anaesthetic management of patient with pituitary microadenoma with severe pregnancy induced hypertension posted for emergency Caesarean section under epidural anaesthesia.

Keywords: caesarean, management, pituitary, tumour, PIH

Introduction

Anaesthesia for pituitary tumours posted for non- neurological surgeries is a challenge. Risk of sudden change in intracranial dynamics during administration of spinal anaesthesia or during laryngoscopy, intubation & extubation or during stress response of general anaesthesia. Pituitary tumour cells in patients with prolactinomas and that with growth hormone secreting tumour exhibit symptomatic enlargement during pregnancy, either due to the growth promoting effect of oestrogens or due to high levels of circulating progesterone that occur with gestation. A careful assessment of pituitary function & screening of visual field & fundus examination to rule out any mass effect is required. Thus, there is a risk of rise in intracranial pressure (ICP), cerebral oedema, headache, nausea, vomiting, visual field defects & worsening of neurological status which are often misinterpreted as hypertensive disorders of pregnancy.

Case Report

A 29 y/F weighing 90kgs & height of 155cm with 35.6 weeks of gestation with known history of pituitary microadenoma since 1.5 year taking tab Cabergoline, stopped in 2nd trimester. Amitriptyline 10mg HS was started as she complained of persistent headache newly diagnosed with gestational Hypertension since 1 month Taking Tab. Labetalol 100mg BD regularly with visual disturbances. Patient G3P2L2 with previous history of 2 LSCS. Airway examination done suggested easy intubation with Mallampati class 2 & > 3 fb mouth opening with no macroglossia. All Labs WNL, Prolactin: 115.

MRI brain was suggestive of pituitary microadenoma 3-4 mm with pituitary size of 12 × 14×4mm which was done at 4 months trimester with no other significant abnormality detected. 2D- ECHO was normal. Ophthalmology reference was done to rule out any e/o-papilloedema. Neuromedicine & endomedicine consult taken before surgery. Starvation confirmed, written informed consent taken, 2 wide bore IV lines secured. Aspiration prophylaxis given. Intubation cart was kept ready. Monitors attached (pulse- oximeter, electrocardiogram, non-invasive blood pressure) Sitting position given & under all Aseptic precautions 18G Touhy's needle inserted into L3-L4 space & epidural Space confirmed with loss of resistance to Air, saline. Epidural catheter fixed at mark 11, test dose with Adrenalised lignocaine 2%3cc given & looked for paraesthesia & Tachycardia Epidural Top-ups given were Inj. Adrenalised lignocaine 2% 3cc (0mins) + Inj. lignocaine 2%3cc +10mcg inj. Fentanyl (after5min) + Inj. 0.5% Bupivacaine 2cc at 8:36 pm (10mins) + Inj. 2% lignocaine 2cc (20mins) Patient tolerated the procedure well and was vitally stable

throughout the procedure, maintaining blood pressure~120/80mmhg, HR~80/min & Spo2~100%. Procedure was uneventful.

Discussion

Functional pituitary adenomas produce an excess of anterior pituitary hormones. During pregnancy, the pituitary gland undergoes global hyperplasia & volume increases by 45%. Adenomas secreting both growth hormone (GH) & prolactin are common. Other less common pituitary tumours are growth hormone secreting lesions resulting in acromegaly, adrenocorticotrophic hormone (ACTH) secreting tumours causing Cushing's disease & a very rare TSH secreting lesions resulting in hyperthyroidism. Patients with acromegaly exhibit a general overgrowth of soft tissues leading to enlargement of hands, prognathism skeletal, connective & macroglossia, & thickening of laryngeal & pharyngeal soft tissues & vocal cords, hypertrophy of uvula, epiglottic fold & recurrent laryngeal nerve palsy can also occur. All major organs increase in size including heart, lung, liver, thyroid & kidneys. These patients require preoperative evaluation & management of coronary artery disease, cardiomyopathy with imbalances. Arrhythmias. Upper airway obstruction with sleep obstruction & Central, hypertension, diabetes & electrolyte apnea depression. Therefore is a major cause of laryngeal airway the risk of death from respiratory failure is threefold greater in patients with acromegaly. Active Acromegaly during pregnancy does increase insulin resistance & thus increase the risk of gestational diabetes & hypertension.

Anaesthesia Considerations

Underlying cardiac disease, from metabolic syndrome, hypertension, acromegaly associated cardiomyopathy may become symptomatic during pregnancy. Diabetes insipidus (DI) can occur de novo during pregnancy or in the postpartum period, while pre-existing DI may be exacerbated during pregnancy. Glucocorticoid dose does not usually need to be changed during pregnancy although symptoms occasionally indicate that a mild increase is required. The preanesthetic considerations are related to the endocrine & the tumour status.

During the preanesthetic evaluation, the size & location of the tumour & its effect on intracranial dynamics should be determined by preoperative MRI of brain. Difficulty with Endotracheal intubation should be anticipated in an acromegalic patient. The intubating laryngeal mask airway is another alternative in patient with acromegaly. Mask ventilation may be difficult in acromegalic patients requiring oral airway. In our case MRI was done at 4 months to confirm size. Sr. prolactin was greatly increased 115.84 ng/ml. there was gest HTN which progressed to severe preeclampsia. Also gest DM was diag. Though GH levels. One study demonstrated that CSF pressure rises significantly even with 10 ml of bupivacaine administration in the epidural space in patients with reduced intracranial compliance. We had taken care to administer the epidural drug slowly to minimise this effect and there was no adverse event in the intra and postpartum period. There is a possible risk of accidental Dural puncture during placement of epidural catheter.

Raised ICP Can result in either reduction in perfusion pressure with concomitant ischemic injury or herniation of brain tissue causing brain injury. The main of the

anaesthesiologist is smooth induction of anaesthesia by avoiding coughing, straining by maintaining patient in deeper plane of anaesthesia, avoiding hypo or hypertension. Intravenous induction of anaesthesia with either thiopentone or propofol may be used. It will produce a fall in ICP by lowering the cerebral metabolic rate (CMRO2) & the cerebral blood flow (CBF). It is essential for pregnant patient to undergo MRI after 4 months of gestation.

Conclusion

Thus, we described the successful use of epidural anaesthesia in an obese parturient with 35 wks. of gestation with pituitary microadenoma with severe PIH without any signs of raised ICP & obstruction to CSF drainage. However, it must be decided based on the individual's clinical status, anaesthesiologist's expertise in managing cases under regional anaesthesia along with the patient's desirability to undergo awake surgery.

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Author's Contribution

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Conflict of Interest

Not available

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